

REMARKS

This paper is in response to the Office Action dated August 10, 2005. The due date for response extends to November 10, 2005. Claims 1-7 have been cancelled as a result of a restriction requirement. A new claim 23 has been added without introducing new matter. Claims 8-23 are pending in the application. Claims 8-22 stand rejected. Formal drawings will be submitted prior to issuance.

Rejections under 35 USC §102

Claims 8-22 are rejected under 35 U.S.C. 102(e), as being anticipated by *Vanell et al.* (U.S. 6,592,434). The rejection is traversed, and Applicants request reconsideration.

In regards to independent claim 8, *Vanell et al.* teaches a wafer carrier for a CMP tool 300 that is adjustable to provide center fast to edge fast removal from a semiconductor wafer. This is achieved by a magnetostrictive actuator 311 that changes the contour of pressure transfer plate 304, which is flexible, by expanding or contracting vertically. The pressure transfer plate 304 then transfer the contour change to the two elastically flexed wafer support structures 318 and 305, through the fluid in the cavity 317. Support structures 318 and 305 are made of stainless steel that can change contours, but not between rigid and compliant states. The magnetostrictive actuator 311 is made of a material that exhibits magnetostrictive property, which produces a change in shape when exposed to a magnetic field. (See, Figure 9 and its accompanying description)

The magnetostrictive actuator 311, when under magnetic field, changes the contours of the pressure transfer plate 304, the cavity 317, and the two elastically flexed wafer support structures 318 and 305. The magnetostrictive actuator 311 is always rigid. It expands or contract vertically under electromagnetic field. While the two elastically flexed wafer support structures 318 and 305 that come in contact with wafer are always compliant (due to their elastic properties) to the pressure from the pressure transfer plate 304 and cavity 317. No component in the wafer carrier of *Vanell et al.* changes between a compliant state and a rigid state due to an electromagnetic field being applied to the chuck (or wafer carrier), as defined in claim 8. Therefore, Applicants submit that claim 8 is patentable over *Vanell et al.* and request the withdrawal of its rejection.

Claims 9 –14 are dependent claims of independent claim 8. Based on the argument described above for independent claim 8, claims 9-14 are patentable over *Vanell et al.* In addition, *Vanell et al.* does not teach a magnetorheological fluid, as defined in claim 11. *Vanell et al.* also does not teach a semi-conductive polymer disposed on an outer surface of the outer membrane and the semi-conductive polymer material acts as an electrostatic chuck, as defined in claims 12 and 13. Therefore, Applicants submit that claims 9-14 are patentable over *Vanell et al.* and request the withdrawal of their rejection. Applicants respectfully request that the Examiner point out where a chuck supporting a substrate and changing between a rigid state and a compliant state is disclosed.

In regards to independent claim 15, claim 15 defines a planarization module that corresponds to independent claim 8. Based on the same arguments described above for claim 8, Applicants submit that independent claim 15 is also patentable over *Vanell et al.* and request the withdrawal of its rejection.

Claims 16 –22 are dependent claims of independent claim 15. Based on the argument described above for independent claim 15, claims 16-22 are patentable over *Vanell et al.* In addition, *Vanell et al.* does not teach an outer membrane having a fluid defined therein, with the fluid configured to change viscosity in response to the electromagnetic field being applied to the substrate support and the fluid is a suspension that includes one of a magnetic and a magnetorheological material, as defined in claims 17 and 20. *Vanell et al.* also does not teach a rotatable planarization surface is a grinding wheel, as defined in claim 18. Besides, *Vanell et al.* does not teach an outer membrane having a polymer defined therein, with the polymer configured to change compliance in response to the electromagnetic field being applied to the substrate support and the polymer is a matrix that includes one of a magnetic and a magnetorheological material, as defined in claims 21 and 22. Therefore, Applicants submit that claims 16-22 are patentable over *Vanell et al.* and request the withdrawal of their rejection.

In consequence, Applicants respectfully request withdrawal of the rejection to claims 8-22. New claim 23 recites elements that are patentable over *Vanell et al.* based on the argument above. Therefore, Applicants request that claims 8-23 be indicated to be allowable. A notice of allowance is respectfully requested. If the Examiner has any questions concerning the present amendment, the Examiner is kindly requested to contact the undersigned at (408) 774-6924. If any other fees are due in connection with filing this amendment, the Commissioner is also authorized to charge Deposit Account No. 50-0805 (Order No. LAM2P471). A duplicate copy of the transmittal is enclosed for this purpose.

Respectfully submitted,
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